

KLOUB, J.

Buildings and machines and devices used in the recent building of dams in Switzerland.

P. 190, (Mechanizace) Vol. 4, No. 6, June., 1957, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. - VOL. 7, NO. 1, JAN. 1958

KLOUB, J.

Rock-filled dams with packing at the upstream side. p. 257.

INZENYRSKE STAVBY. (Ministerstvo stavebnictvi) Praha, Czechoslovakia.  
Vol. 7, no. 7, July 1959

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 11, Nov. 1959  
Uncl.

KICUS, J.

Hydration in hydraulic engineering. p. 385.

INZENYERSKE STAVBY. (Ministerstvo stavebnictvi)  
Praha, Czechoslovakia Vol. 7, no. 10, Oct. 1959.

Monthly List of East European Accession, (SEAI), LC, Vol. 6, No. 12, Dec. 1959  
Uncl.

KLON, Josef, ing. dr.

Development of hydraulic power engineering in Brazil. Vodni  
hozp 14 no.10:395-397 '64.

KLOUB, Miroslav, nadrotalstr

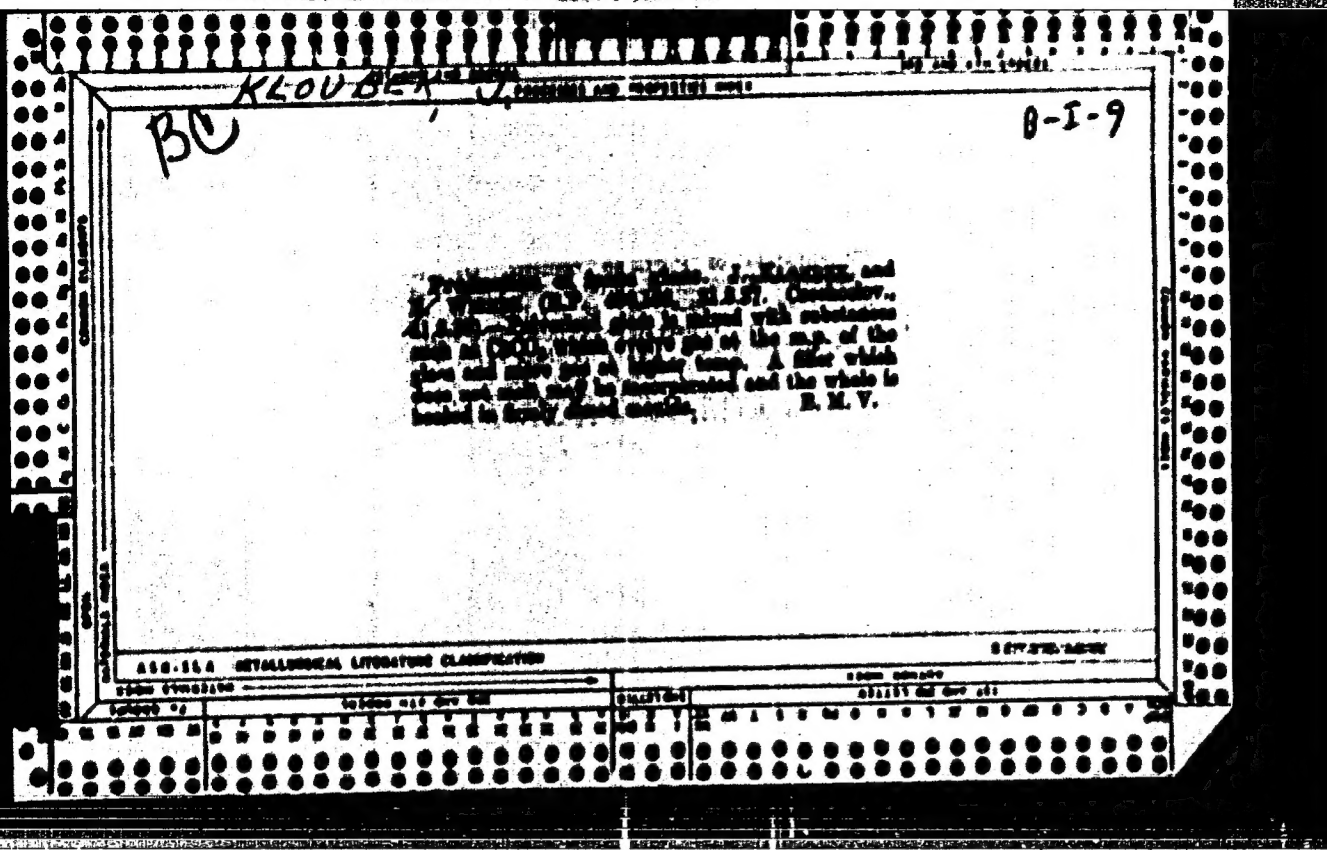
The bearing is accurate. Starsh.-serah. no.4:16 Ap '62.  
(MIRA 15:4)  
(Czechoslovakia--Air force)

KLOUB, Vaclav, inz. arch.

Industrial enterprises in the United States. Tech praca 17 no.2;  
118-120 P '65.

KLOUB, Vaclav, inz. arch.

Industrial enterprises of the United States. Pt.3. Tech prac  
17 no.4:263-267 Ap '65.





Kloubek

CHECHO-SLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry.

E-2

Abs Jour: Ref Zhur-Khimiya, No 6, 1957, 19193.

Author : Lukesh, Kovarsh, Blaha, Kloubek

Inst :

Title : 2 Piperidines. V. Synthesis N-methyl-2-phenacyl-piperidine.

Orig Pub: Chem. Listy, 1956, 50, No 2, 278-281. Sb. Chekhosl. Khim. Rabot, 1956, 21, No 5, 1324-1327.

Abstract: Since the  $\delta$ -methylaminovaleric aldehyde (I), obtained before as a dimethylacetal (II) (see part IV), presents seemingly, the initial product of the alkaloid sedamine [(product of reduction N-methyl-2-phenacylpiperidine (III)], the condensation of I in physiological conditions with benzylacetic acid (IV), which leads to III, is studied. I is isolated from II by titration with IN HCl.

Card : 1/3

Card : 4/5

Cloube, Jan

Configuration of cyc ally ester N-methylmaleimide

100 g. (100% yield) in  
 100% 70% EtOH. Anal. calcd.  
 for  $C_{10}H_{11}NO$ : C, 74.1%; H, 7.1%; N, 8.8%.  
 IR (KBr): 1650 (C=O), 1550 (C=C), 1450 (C=C), 1350 (C=C), 1250 (C=C), 1150 (C=C), 1050 (C=C), 950 (C=C), 850 (C=C), 750 (C=C), 650 (C=C), 550 (C=C), 450 (C=C), 350 (C=C), 250 (C=C), 150 (C=C).  
 UV (CHCl<sub>3</sub>):  $\lambda_{max}$  210 m $\mu$  ( $\epsilon$  10,000),  $\lambda_{min}$  220 m $\mu$  ( $\epsilon$  1,000).  
 NMR (CDCl<sub>3</sub>):  $\delta$  7.5 (d, 2H, ArH), 6.5 (d, 2H, ArH), 5.5 (t, 2H, ArH), 4.5 (t, 2H, ArH), 3.5 (t, 2H, ArH), 2.5 (t, 2H, ArH), 1.5 (t, 3H, CH<sub>3</sub>).  
 Mass (m/e): 175 (M<sup>+</sup>), 157 (M<sup>+</sup> - 18), 142 (M<sup>+</sup> - 33), 127 (M<sup>+</sup> - 48), 112 (M<sup>+</sup> - 63), 97 (M<sup>+</sup> - 78), 82 (M<sup>+</sup> - 93), 67 (M<sup>+</sup> - 108), 52 (M<sup>+</sup> - 123), 37 (M<sup>+</sup> - 138), 22 (M<sup>+</sup> - 153), 7 (M<sup>+</sup> - 168).  
 High-resolution mass spectrometry:  $M^+$  175.0434 (calcd. 175.0434).  
 Elemental analysis: Calcd. for  $C_{10}H_{11}NO$ : C, 74.1%; H, 7.1%; N, 8.8%. Found: C, 74.1%; H, 7.1%; N, 8.8%.  
 Literature: J. Org. Chem., 1964, 29, 1000.

Luke, Rudolf; Kloubek, Jaroslav.  
[6] -67°. Dissolving the salt (4.8 g.)  
N HCl, heating 30 min., filtering, extg. with  
the filtrate in vacuo, and drying, the residue  
EtOH gave 1.8 g. of the HCl salt of I from  
which I was also obtained by dissolving 0.5  
g. III in 3 ml.  
6 N HCl, evapng. to dryness, erycng. the resd.  
as from EtOH  
and EtOH, treating the crystals with 0.25 ml.  
0% eq. CH<sub>3</sub>O,  
heating 3 hrs. on the steam-bath, adding  
0.4 ml. 76%  
HCO<sub>2</sub>H, heating on the steam-bath 15 hrs.,  
evapng., adding  
3 ml. 6 N HCl, and evapng. to dryness in vac.  
The residue  
was cryd. from EtOH and EtO to give  
ion of IV gave  
salt, m. 206° [α]<sub>D</sub><sup>20</sup> +49°. Similar methyl-  
same product  
HCl salt of II, m. 206°, [α]<sub>D</sub><sup>20</sup> -47°. To  
the mother  
(0.4 g.). [α]<sub>D</sub><sup>20</sup> -47.8°, was obtained by tre-  
+ base, filter-  
ling the liquor after sepg. the dextrorotatory salt  
the filtrate, re-  
ing off the crystals after 45 hrs., evapng.  
H<sub>2</sub>O. Free II,  
moving the XI with HCl, and chng. the  
OH over PtO.  
[α]<sub>D</sub><sup>20</sup> -69.7°. Hydrogenation of V in  
Treating 5 g.  
[α]<sub>D</sub><sup>20</sup> +21.25 g. of  
gave 68% α-piperidine acid (XII), m. 204°  
of III (2.5 g.)  
s. XII with tartaric acid gave the H tartrate  
m. 182°. [α]<sub>D</sub><sup>20</sup> 20.3°; free III, m. 264°;  
to of IV, m. 182°.  
the mother liquors was isolated the H tartrate  
lapse chromatog-  
[α]<sub>D</sub><sup>20</sup> -20.2°; free IV, [α]<sub>D</sub><sup>20</sup> -25.2°.  
I 1 nOH-AcOH.  
graphy on Whatman No. 1 paper in 4:1  
X 0.50, 1.0, 5%,  
II, O at 20° gave the following R<sub>f</sub> values:  
di-N-methylpi-  
XII 0.52, di-N-methylpiperidine acid 0.51,  
acid 0.61, and  
nitroprussic acid (0.5), methylamine acry-  
di-N-methylpi-  
nitroprussic 0.53.

100 ml. hot EtO, evap., then EtOH and 62° I was 1 ml to 3 ml. from EtOH 0.4 ml. 78% evap., adding The residue 127 g. 1 HC 100 of IV gave same product as the mother I with addnl + base, filter the filtrate. re H<sub>2</sub>O. Free II, off over P<sub>2</sub>O<sub>5</sub>. Treating 5 g of III (2.85 g) in 20 cc. From 100 of IV, m. 182°, appt chromatog. 1. UnOH-AcOH. X 0.50, 1.08, D. N-methylac. and 0.61, and 1.11.

2/2

in

*Kloubek, J.*

CZECHOSLOVAKIA / Organic Chemistry. General and  
Theoretical Topics of Organic Chemistry.

Q

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60814.

Author : Rudolf Lukes, Jan Kovar, Jan Kloubek, Karel Blaha.  
Inst : -  
Title : Configuration of Nitrogen Containing Substances.  
IV. Absolute Configuration of Optically Active  
 $\beta$ -Amino- $\beta$ -Phenylpropionic Acid.

Orig Pub: Chem. listy, 1957, 51, No 8, 1501-1509.

Abstract: The absolute configuration of optically active substituted  $\beta$ -amino- $\beta$ -phenylpropionic acids was established by the correlation with  $\alpha$ -aminophenylacetic acids, the configuration of which is known.

Card 1/11

CZECHOSLOVAKIA / Organic Chemistry. General and  
Theoretical Topics of Organic Chemistry.

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60814.

Abstract: The lengthening of the racemate chain or of the optically active  $\alpha$ -aminophenylacetic acid according to Arndt-Eistert reaction did not succeed, because chlorides of corresponding N-formyl- or N-tosylsubstituted acids did not produce diazoketones. 3.2 g of  $\alpha$ -phthalimidophenylacetic acid (I) chloride, melting point 143 to 144° (from benzene) is obtained of 4 g of I and 10 ml of  $\text{SOCl}_2$  (1 hour boiling), that acid chloride, interacting with ether solution of  $\text{CH}_2\text{N}_2$ , produces  $\alpha$ -phthalimidophenylacetyldiazomethane (II), yield 88%, melting point 135.5 to 136.5° (from  $\text{CH}_3\text{OH}$ ). Only resin-like products are obtained by boiling II with  $\text{Ag}_2\text{O}$

Card 2/11

CZECHOSLOVAKIA / Organic Chemistry. General and  
Theoretical Topics of Organic Chemistry.

0

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60814.

Abstract: at below 0° and 2.5 hours of aging at 20°) the mass is cooled again, 1.75 g of IV in 5 ml of  $C_6H_5N$  is added, and after aging (3 hours at 0° and 20° hours at 20°), 2.5 g of a mixture of V and 2-tosyl-amino-2-phenyl-1-tosyloxyethane (VI) was obtained; the melting point of the mixture is 95 to 97° (from aqueous alcohol). The solution of 2 g of V + VI in 10 ml of dioxane is heated 20 min. with the solution of KCN in 10 ml of ethyleneglycol, and 1.36 g of  $\beta$ -tosylamino- $\beta$ -phenylpropionitril (VII) is obtained, melting point 145 to 145.5°. At the heating (90 min. at 55 to 57°) of III solution in mixed dioxane and alcohol (2 : 1) with 10% aal  $H_2O_2$ ,  $\beta$ -tosylamino- $\beta$ -phenylpropionamide (VIII) is produced, yield 82%, melting point 214 to 215°

Card 4/11

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APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723210019-6  
CZECHOSLOVAKIA / Organic Chemistry. General and  
Theoretical Topics of Organic Chemistry.

0

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60814.

Abstract: (from acetone). VIII is not reduced by  $LiAlH_4$ , it does not react with NaOBr solution at heating, and is not saponified. D-(-)-2-amino-2-phenylethanol, melting point 74 to 76°,  $[\alpha]_D^{18} = -24.5^\circ$  ( $c = 4.90$ ,  $CH_3OH$ ), and L-(+)-2-amino-2-phenylethanol (XI) are produced correspondingly by reducing D-(-)- and L-(+)- $\alpha$ -aminophenylacetic acids (IX acid, X acid) with  $LiAlH_4$  (RZhKhim, 1955, 28771). A mixture of ditosyl- and chloroderivatives (melting point of the mixture 85 to 101°,  $[\alpha]_D^{16} = 28.4^\circ$ ) is obtained of X and IV similarly as in the case of mixed V and VI; the derivative mixture

Card 5/11

CZECHOSLOVAKIA / Organic Chemistry. General and  
Theoretical Topics of Organic Chemistry.

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Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60814.

Abstract: is converted into D-(-)- $\beta$ -tosylamino- $\beta$ -phenyl-propionitril [D-(-)-XII], yield 17%, melting point 143 to 144°,  $[\alpha]_D^{18} = -31.6^\circ$  ( $c = 1.17$ , alcohol). Similarly to VIII, D-(-)- $\beta$ -tosylamino- $\beta$ -phenyl-propionamide [D-(-)-XIII] is obtained from XII, yield 62%, melting point 238 to 240° (from acetone-alcohol, 5 : 1),  $[\alpha]_D^{18} = -62.3^\circ$  ( $c = 1.47$ ,  $C_5H_5N$ ). Similarly to XII, L-(+)-XII, melting point 143 to 145° (from benzene),  $[\alpha]_D^{20} = +29.9^\circ$  ( $c = 1.77$ , alcohol), is synthesized of impure XI via a mixture of tosyl derivatives with a yield of 27%; L-(+)-XIII (XIV) is obtained from L-(+)-XII similarly to VIII, yield 49%, melting point 239 to 241° (from acetone),  $[\alpha]_D^{20} = +67.4^\circ$  ( $c = 1.81$ ,  $C_5H_5N$ ). Methyl ester of  $\beta$ -amino- $\beta$ -

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11

CZECHOSLOVAKIA / Organic Chemistry. General and  
Theoretical Topics of Organic Chemistry.

G

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60814.

Abstract: and others, Ber., 1910, 43, 2020), D-(-)- $\beta$ -formyl-amino- $\beta$ -phenylpropionic acid is produced, melting point 134 to 135° (from water),  $[\alpha]_{22}^D = -118.2^\circ$  (c = 1.2, alcohol), it is converted with HCl in alcohol into D-(-)-XV (XVII), yield 71%, boiling point 107°/1.8 mm,  $[\alpha]_{18}^D = -13.2^\circ$ ,  $n_{20}^D = 1.5130$ ,  $d_4^{18} = 1.0659$ . Ethyl ester of  $\beta$ -tosylamino- $\beta$ -phenylpropionic acid (XVIII) is prepared of XV and IV by heating 1 hour in  $C_5H_5N$  in a water bath, yield 53%, melting point 79° (from benzene - petroleum ether). After having been heated 15 hours with 8 n.  $NH_3$  in alcohol in a sealed tube, XVIII produces VIII (95%). Similarly to XVIII, D-(-)-XVIII (XIX) is produced of XVII and IV; XIX

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12

CZECHOSLOVAKIA / Organic Chemistry. General and  
Theoretical Topics of Organic Chemistry.

G

Abs Jour: Ref Zhur-Khimiya, No 18, 60814.

Abstract: is an oil,  $[\alpha]_{18}^D = -30^\circ$  (c = 3.5, alcohol). XIII is produced at the interaction of XIX with  $NH_3$  in alcohol. It is proved by the above that the configuration of (-)-XVI at the asymmetric C is the same as that of IX (compare with RZhKhim, 1957, 22890).  $C_6H_5COCl$  and XV produce ethyl ester of  $\beta$ -benzoylamino- $\beta$ -phenylpropionic acid (XX), yield 80%, melting point 111 to 112° (from 50%-ual alcohol). D-(+)-XX (XXI) was similarly prepared of XVII, melting point 119°,  $[\alpha]_{19}^D = +31.6^\circ$  (c = 1.1,  $CHCl_3$ ),  $[\alpha]_{21}^D = -2.6^\circ$  (c = 1.2, alcohol).  $\beta$ -benzoylamino- $\beta$ -phenylpropionamide, yield 65%,

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CZECHOSLOVAKIA / Organic Chemistry. General and  
Theoretical Topics of Organic Chemistry.

G

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 60814.

Abstract: melting point  $240^{\circ}$  (from alcohol) is produced by heating 0.87 g of XX with 60 ml of 11 n.  $\text{NH}_3$  in alcohol for 32 hours to  $50^{\circ}$  in an autoclave. Similarly, D-(+)- $\beta$ -benzylamino- $\beta$ -phenylpropionamide (XXII), melting point  $260^{\circ}$  (from alcohol),  $[\alpha]_D^{25} = +26^{\circ}$  ( $c = 0.17$ , alcohol) is produced of XXI. XXII does not show any optical activity in  $\text{C}_5\text{H}_5\text{N}$ .  $\beta$ -benzoylamino- $\beta$ -phenylpropionic acid, melting point  $195^{\circ}$ , is produced by saponifying XX with aqueous-alcohol NaOH. XXII with KBrO solution (10 min. of heating to  $80^{\circ}$ ) produces D-(-)-4-phenylimideazolidone-2 (XXIII), yield 31%, melting point  $200^{\circ}$  (from water),  $[\alpha]_D^{25} = -35^{\circ}$  ( $c = 0.4$ , water). 1-Phenyl-1-benzoylaminoethyl-

Card 10/11



|            |  |       |
|------------|--|-------|
| Country    | : Czechoslovakia   |       |
| Category   | : Organic Chemistry - Theoretical Organic Chemistry.   | G-1   |
| Abs. Jour. | :  | 19264 |
| Author     | : Likes, R.; Kovar, J.; Kloubek, J.; Blaha, K.   |       |
| Institut.  | :  |       |
| Title      | : Configuration of Nitrogen-Containing Substances.<br>IV. Absolute Configuration of Optically Active<br>Beta-Amino-Beta-Phenyl-Propionic Acid. |       |
| Orig. Pub. | : Collect. czechosl. chem. commun., 1958, 23,<br>No 7, 1367-1376   |       |
| Abstract   | : See RZhKhim, 1958, 60814.  |       |

Card: 1/1

F-3 - G-1



KLOUBEK, J.; ETTTEL, V.

Reaction of sulfur monochloride with chlorinated ethylene. Coll Cz  
chem 26 no.2:515-522 F '61. (KEAI 10:9)

1. Abteilung für organische Synthesen, Institut für Geochemie und  
anorganische Rohstoffe, Tschechoslowakische Akademie der Wissenschaften,  
Prag.

(Sulfur chlorides) (Ethylene) (Chlorination)

**KLOUBEK, Jan**

- [illegible]

KLOUBEK, J.; EITEL, V.

On the isolation and identification of 1-methyl-1-ethyl-2-phenyl-2-tolyloethyls from the waste product of toluene fraction refining. Coll Cs Chem 28 no.2:397-403 F '63.

1. Institut für Geochemie und mineralische Rohstoffe,  
Tschechoslowakische Akademie der Wissenschaften, Prag.

KLOUBEK, J; MARHOUL, A.

Czechoslovakia

Institute of Geochemistry and Mineral Raw Materials,  
Czechoslovak Academy of Science -- Prague - (for all)

Prague, Collection of Czechoslovak Chemical Communications,  
No 4, 1963, pp 1016-1021

"On Bringing About Aryl-N, N-Bis-(2-Hydroxyethyl) Sulfo-  
namide and the Bilding of Arylsulfomorpholide."

2

KLOUBEK, J.; MARHOUL, A.

On the production of aryl-N,N-di(2-chloroethane) sulfonamides and their reaction with potassium glycolate. Coll Cs Chem 28 no.4:1076-1079 Ap '63.

1. Institut für Geochemie und mineralische Rohstoffe,  
Tschechoslowakische Akademie der Wissenschaften, Prag.

L 42260-66 RM  
ACC NR: AP6031485

SOURCE CODE: CZ/0008/66/000/004/0470/0478

AUTHOR: Kloubek, Jan

ORG: Geological Institute, CSAV, Prague (Geologicky ustav CSAV)

TITLE: Importance of the area of a chromatographic spot

SOURCE: Chemické listy, no. 4, 1966, 470-478

TOPIC TAGS: chromatography, quantitative analysis

ABSTRACT: Apart from the relative rate of movement of the sorbate in a chromatogram, the volume of sorbent through which the sorbate is distributed is also important in quantitative determinations. The area of the chromatographic spot is the factor most easily used for a quantitative evaluation of an analyzed substance. When the thickness of the chromatographic layer remains constant the area is directly proportional to the volume of the sorbent. When this fact is used for analysis, a calibration curve is used. The number of theoretical plates required for a separation is indirectly proportional to the size of the original zone. The amount of the solution applied to a chromatogram is directly proportional to the area of the resulting zone, the area being a logarithmic function of the amount of the sorbate. The causes and manners of evaluation of errors are described. The length of the spot is discussed. Orig. art. has: 12 formulas. [JPRS: 36,464]

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 026

Card 1/1



KLOUCEK, B.; GASPARIC, J.; OBRUBA, K.

Determination of hydroxyl groups by acetic anhydride acetylation in the presence of perchloric acid as catalyser. Coll Cs Chem 28 No.6:1606-1609 Js '63.

1. Forschungsinstitut für organische Synthesen, Pardubice-Rybitví.

CZECHOSLOVAKIA

GASPARIC, J.; KLOUCEK, E.

Research Institute for Organic Synthesis (Forschungsinstitut  
für organische Synthesen), Pardubice-Rybitvi-(for both)

Prague, Collection of Czechoslovak Chemical Communications, No 1,  
January 1964, pp 107-112

"Identification of organic compounds. Part 38: On the constitutional  
determination of arylide aromatic carboxylic acids."

KLOUCEK, Frantisek; ZOUBEK, Ratmir

Familial retinoblastoma. Cesk.oftth.16 no.7:412-419 N°60.

1. II. oční klinika KU v Praze, přednosta akademik dr. J.Kurš.  
Oční klinika KU v Hradci Králové, přednosta prof.dr. M.Klíma.  
(NEUROEPITHELIOMA genetics)

DIVISOVA, O.; KLOUCKY, J.

Certain considerations on anomalous correspondence. Cesk. ofth. 17  
no. 2: 85-89 Mr '61.

1. II. oční klinika v Praze, přednosta akad. J. Kurs.  
(STRABISMUS)

DIVISOVA, G.; KLOUCEK, P.

Relation of surgery of strabismus to extramacular fixation.  
Cesk.ofth.17 no.2:90-95 Mr '61.

1. II. oční klinika KU v Praze, přednosta akademik J. Kura.  
(STRABISMUS surg)

**KLIKA, Eduard; KLOUCEK, Frantisek**

The lining of the anterior chamber in the rabbit's eye and its reaction under experimental conditions. Cs morfologie 9 no.3:282-293 '61.

1. Histologicky ustav fakulty vseobecneho lekarstvi Karlovy university v Praze, prednosta akademik Jan Welf a II. ocní klinika fakulty vseobecneho lekarstvi Karlovy university v Praze, prednosta akademik Jaromir Kurz.

(LJE)

KLÍKA, Eduard; KLOUCEK, František

Structure of the anterior surface of the iris. (Comparative studies).  
Česk. morf. 10 no.2:234-241 '62.

1. Histologický ústav fakulty všeobecného lékařství University Karlovy  
v Praze, přednosta akademik Jan Wolf, II, oční klinika fakulty  
všeobecného lékařství University Karlovy v Praze, přednosta akademik  
Jaromír Kurz.

(IRIS anat & histol)

DIVISOVA, Gabriela; KLOUCEK, Frantisek

Diagnostic possibilities in anomalous retinal correspondence. Cesk.  
oftal. 18 no.3:175-179 My '62.

1. II. oční klinika fak. všeob. lek. Karlovy university v Praze,  
prednosta akademik J. Kurz.  
(STRAHISMUS diag)



KLOUCEK, Fr.

Histological findings following the irradiation of retinoblastoma.  
Cesk. oftal. 18 no.6:411-418 N '62.

1. II. oční klinika fak. všeob. lek. University Karlovy v Praze,  
prednosta akademik J. Kars.  
(RETINOBLASTOMA) (RADIOTHERAPY)

KLICKA, Eduard; KLOUCEK, Frantisek

The structure of the front surface of the iris. Cs morfologie 10 no.2:  
234-241 '62.

1. Histologický ústav fakulty všeobecného lékařství university  
Karlovy, Praha; Oční klinika fakulty všeobecného lékařství university  
Karlovy, Praha.

\*

KLOUCEK, F.

Onkocytoma of the earuncle. Cesk. oftal. 19 no.2:117-119 Mr '63.

1. II. oční klinika fakulty všeobecného lékařství KU v Praze,  
prednosta akademik J. Kura.

(EYE NEOPLASMS)

(ADENOLYMPHOMA)

KREJCI, L.; OBERBERGER, J.; KLOUCEK, P.; LEHKY, B.; JANSÁ, J.

Experiences with the new neutralization substance DETA in acid burns of the eye. I. Experimental part. Cesk. oftal. 20 no.4:314-320 J1'64.

1. II. oční klinika fakulty všeobecného lékařství KU [Karlovy university] v Praze (prednost: akademik J.Kurz); Laborator fyziologie a patofyziologie zrakového analyzátoru CSAV [Československé akademie věd] v Praze, (vedoucí: akademik J.Kurz) a Závodní zdravotnické středisko Spolku pro chemickou a hutní výrobu, n.p. v Ústí n.L., (vedoucí lékař: MUDr. B.Lehky).

KLOUCEK, F.

Some new data on the morphology and ultrastructure of the trabecula of the iridial angle. Cesk. oftal. 20 no.5:337-342 S '64.

1. II oční klinika fakulty všeobecného lékařství Karlovy University v Praze (prednosta akademik J. Kurz).

MYSKA, V.; OTRADOVEC, J.; KLOUCEK, F.; SOBRA, J.; PROCHAZKA, B.

Mucocutaneous form of eosinophilic xanthomatous granuloma with severe corneal involvement in an adult man. Cesk. oftal. 20 no. 5:360-368 S '64.

1. II oční klinika fakulty všeobecného lékařství Karlovy University v Praze (prednosta akademik J. Kurz); III interní klinika fakulty všeobecného lékařství Karlovy University v Praze (prednosta akademik J. Charvat) a IV. interní klinika fakulty všeobecného lékařství Karlovy University v Praze (prednosta prof. dr. M. Fucik).

KLAPÁČEK, F.

The endothelium of the human cornea during growth and aging. Sborn. lek. 67 no.6:177-185 Je'65.

1. II. oční klinika fakulty všeobecného lékařství University Karlovy v Praze (predoctoral akademik J. Kurr).

KLOUCEK, Jaromir, ins.

Automatic drawing devices. Doprava no. 2:136-139 '64.



KLOUCEK, Jaromir, inz.; KOZLER, Jaroslav, inz.

Basic principles of automatic dispatching, and operational  
program of an automatic computer. Doprava no.5:347-358 '63.

COZL, Jiri, inz.; KLOMEK, Jaroslav, inz.

Establishment of commercial graphs of two-track railroad transportation  
on automatic computers. Doprava no.1:29-43 '63

COZL, Jiri, ins.; KLOUCEK, Jaromir, ins.

Automation of the dispatching system at railroad junctions.  
Doprava no. 1:59-67 '64.

KLOUCEK, Josef; VLCEK, Jaroslav

Draft of a symbolic system for formulating the tasks of processing collective economic informations. Stroje na sprac inf 8:181-187 '62.

1. Vyukumny ustav matematickych stroju, Praha.

KLOUCEK, Z.; DILEK, F.

A case of recurrent jaundice caused by an anomaly of the biliary tract. Congenital cystic dilatation of the common bile duct. Rozhl. chir. 44 no.12:806-810 D '65.

1. Chirurgické oddelení nemocnice v Kutné Hore (vedoucí MUDr. Z. Klouček).

MARTINU, Kamil, MUDr.; KLOUCKOVA, Alena

Epidemic keratoconjunctivitis in Prague during May-September, 1955. Cesk. epidem. mikrob. imun. 5 no.2:90-93 Apr 56.

1. Krajska hygienicko-epidemiologicka stanice UNV Praha.  
(KERATOCONJUNCTIVITIS, epidemiology,  
in Czech. (Cs))

KLOUCKOVA, A.

CZECHOSLOVAKIA, Virology - Viruses of Man and Animals.  
Viruses of Hepatitis.

E

Abs Jour : Ref Zhur Biol., No 6, 1959, 23884

Author : Krasna, V., Radkovsky, J., Klouckova, A.

Inst : -

Title : Evaluation of the Effectiveness of Gamma-Globulin as a  
Remedy in Prophylaxis of Infectious Hepatitis in Prague  
during the Period 1953-1956.

Orig Pub : Zh. gigiyeny, epidemiol., mikrobiol. i immunol.  
(Czechosl.), 1957, 1, No 4, 356-364

Abstract : No abstract.

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- 32 -

L 37441-65 SPA/ENP(w)/ENP(f)/EPF(n)-2/ENP(d)/ENP(v)/ENR/T/ENP(t)/ENP(k)/ENP(bb)-2/  
 ENP(b) Pas-A/Pf-A/Ps-t JD/WB/EM  
 ACCESSION NR: AP5015841 CZ/0059/64/000/004/0031/0038

AUTHOR: Kloud, J. (Engineer)

TITLE: Effect of the temperature field on the life of gas turbine blades<sup>26</sup>

SOURCE: Letnany. Vyskumny a skusební letecký ústav. Zpravodaj VZLU, no. 4, 1964, 21-38

TOPIC TAGS: gas turbine, temperature field, turbine blade, life, heat stress, blade failure<sup>23</sup>

ABSTRACT: Heat stress in aviation gas turbine blades is described as due to thermal gradients created by alternate heating and cooling whenever the engine is started, accelerated, decelerated, or stopped. When heat stress is superimposed on centrifugal and vibration stress over a long period, it can cause metal fatigue and blade rupture. When blades fail after short periods of operation, the cause is usually abnormal operating temperatures, which occur in "hot starts", too rapid acceleration, at high altitudes when the compressor is less effective, or when the pilot exceeds the maximum permissible rpm. Heat gradients may cause metal creep, may affect the trailing edge of a blade more than the leading edge, may cause permanent distortion of blades, or start cracks in the most heavily stressed edge. These effects are described in detail

Card 1/2



L 57441-65

ACCESSION NR: AP60:3841

and are represented in graphs and diagrams. Heat fields around blades in a well-regulated turbine are also diagrammed, but it is pointed out that heat variations in the gas do not affect the metal in the blades at medium or high vibration rates (up to 3 cycles/sec.) except in very thin blade edges (0.5 mm) where temperature amplitudes may equal about 15% of the gas heat variations. Two types of apparatus, described and photographed, are used to test actual blades for heat stress. All tests have demonstrated that the form and dimensions of turbine blades are more important in controlling heat stress than the physical properties of the various metals and alloys of which they are made. Orig. art. has 16 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PR

NO REF SOV: 002

OTHER: 004

KLOUD, Jan, ins.

Thermal stress of combustion turbine rotor blades. Zpravodaj  
VZLD no.1:33-38 '63.

KLOUD, Jan, inz.

Effect of temperature field on the service life of gas turbine  
impeller blades. Zpravodaj VZLU no.4:31-38 '64.

KLOUDA, A

Catalytic reduction of nitrobenzene  
 J. Nard, and A. Klouda (Vysk. delov. op. sy. (thes. Far-  
 tucica-Hydriz, Czech. J. Chem. Listy 90, 1035-6 (1965) —  
 When Langenbeck catalysts (CA 47, 6060, and 49,  
 11954) were used at 100 atm. and 50-10°, the yields of N-  
 ethylpiperidine averaged 83.2 and 85.0%, resp. compared  
 with 87.4% obtained with Raney Ni. Product described  
 in both types of catalysts.

on

KLOUDA, Milan

"ABC world airways guide." Reviewed by Milan Klouda.  
Letecky obzor 8 no.7:203-206 J1'64.

KLOUDA, M.

Lethal course of the Kasabach-Merrit syndrome (hemangioma and thrombocytopenia) in an infant. Cesk. ped. 20 no.12:1097-1100 D '65.

1. Detské oddelení Krajské nemocnice s poliklinikou v Českých Budejovicích, (vedoucí - MUDr. L. Šabata).

KLOUDA, Miroslav

Histamine skin tests in epileptic children. Cesk.psychiat.56 no.5:  
318-322 0'60.

1. Detska psychiatricka lecebna v Operanech.  
(EPILEPSY diag)  
(HISTAMINE pharmacol)

KLOUDA, Milan

Problems of supersonic transport. Letecky obzor 6 no.3:70-71 '62.



KLOUDA, Milan

Drafting of the time table for airlines. Letecky obsor 6  
no.5:141-143 My '62.

KLOUDA, MIROSLAV

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees:

Affiliation:

Source: Prague, Praktický Lékař, Vol 41, No 11, 1961, pp 515-516.

Data: "Treatment of Labllozis With Acrinile."

Authors: KLOUDA, Miroslav, MD, Child Psychiatric Hospital (Detská psychi-  
atrická léčebna), Opatov.

VOSTA, Jaroslav, PhMr, Parasitological Laboratory, KHES /Krajská  
hygienicko-epidemiologická stanice/ (Parazitologická  
laborator KHES), Ceske Budejovice.

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142

VOSTA, J.; KOLAR, J.; KLOUDA, M.; PETRU, M.

Our experience with modern anthelmintics. III. Therapy of the infestation with the tapeworm *Hymenolepis nana* with "Cestodin" and its comparison with Acranil. Cas.lek.cesk 100 no.37:1169-1171 15 8. '61.

1. Parasitologicka laborator KHES - C. Budejovice, prednosta MUDr.  
J. Vosta. Detska psychiatricka lecebna v Opatovce, prednosta MUDr.  
Fl. Vojtik. Laborator pro klinickou parazitologii fakultni nemocnice  
v Praze, prednosta akademik O. Jirovec.

(ANTHELMINTICS ther) (TAPEWORM INFECTION ther)

KLOUDA, Miroslav, ins.

Modernization of the Bratislava-Ivanka airport. Letecky obsor  
6 no.1:19-21 Ja '62.

L 25826-66

ACC NR: AP3024840

SOURCE CODE: CZ/0078/65/000/009/0010/0010

AUTHOR: Klouda, Pavel (Prague)

ORG: none

TITLE: Czech patent No. 589-65 [Transistorized amplifier]

SOURCE: Vynalez, no. 9, 1965, 10

TOPIC TAGS: transistorized amplifier, amplifier design, transistor, collector emitter junction

TRANSLATION: The transistorized amplifier of an alternating signal is characterized by the fact that the working point of one or several transistors is located close to the bend of the collector characteristic so that there will be d.c. voltage in the current direction on the current-to-base transition and a d.c. voltage with polarity in the current direction will remain on the emitter-to-base transition. The absolute value of the d.c. voltage of the collector with respect to the base is lower than the absolute value of the d.c. voltage of the emitter with respect to the base. The d.c. current passes through the collector transition, and the shut-off and emitter transitions in the current direction.

SUB CODE: 09

SUM DATE: 28Jan65

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Card 1/2

ZACH, Milos, ins.; KLOUDA, Rudolf

Permanent magnetic circuits of magnetrons. Sbor vak elektrotech  
3:74-94 '61.

ZACH, Milos, ins.; KLOUDA, Rudolf

Measurement of some magnetic quantities. Sbor vak elektrotech  
3195-105 '61.

KLOUDOVÁ, H.

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Safety and Sanitation.

H-6

Abs Jour: Ref Zhur-Khim., No 2, 1959, 5185.

Author : Spurny, Kvetoslav; Kloudova, Helena.

Inst :

Title : Experiment of Dosimetry of X-Ray and  $\gamma$ -Ray Radiations and of Determination of Concentration of Radioactive Aerosols in Operators' Positions.

Orig Pub: Pracevní lekár, 1958, 10, No 2, 167-170.

Abstract: The work in the sphere of dosimetry and determination of radioactive aerosols using simple equipment and based on known methods modified by the authors is described. The x-ray and  $\gamma$ -ray radiations were measured in separable ionization chambers with a modified Wulf electrometer. The autoradiographic method

Card : 1/2 USTAV FYZIKALNI CHEMIE CSAV  
a LABORATOIRE HES-UNV v PRAZE



KLOUS, V.

KLOUS, V. - Polarographic atalytic effect of protenins in glycine buffers containing cobalt. p. 213. Vol. 50, no. 2, Feb. 1956  
CHEMICKÉ LISTY (Ceskoslovenska akademie ved. Chemicky ustav)  
Praha, Czech.

SOURCE: EAST EUROPEAN ACCESSIONS LIST (EEAL) VOL 6 NO 4 April 1957

KLOUZAK, Mironlav, ins.

May anniversary of the liberation of Czechoslovakia and the  
development of Czechoslovak electrical engineering.  
Elektrotechnik 17 no.5:125 My '62.

Klonzal, M.

271.34(37)24.43  
✓ **Non-Airblast circuit breakers of high breaking capacity.** M. KLONZAL, Elektrotech. Ober, 44, EL No. 1, 425-8 (1953) in German.

Two types of air-blast circuit breakers produce 1 in Cischolovskis are briefly described and illustrated, namely the types VMT 1000, 2000 and 3000. Their applications and performance data are given in tables and compared with those of German, French and U.S. air-blast breakers of the corresponding classes.  
ELECTRICAL RESEARCH ASSOCIATION

XLOVACH, V.

XLOVACH, V.

Soviet coal [with English summary p.42]. Vnesh.torg. 27 no.3:24-25  
'57. (MLBA 10:5)

(Coal)

KLOVATSKIY, A.

The question has been put in time. Mashinostroitel' no.10:31  
0 '63. (MIRA 16:12)

KLOVATSKIY, P.O.

Using hour norms in planning and accounting in auxiliary plants.  
Avt.1 trakt.prom.no.12:1-3 D '56. (MLRA 10:2)

1. Khar'kovskiy traktorayy zavod.  
(Factory management)

KLOVATSKIY, V. (Poltava)

Improve direct relations. Sov.torg. 36 no.12:44-45 D '62.

(MIRA 16:1)  
(Poltava Province—Wholesale trade)

KLOVATSKIY, Y.

Wholesale trade should be under the administration of state trade organisations. Sov. torg 33 no.10:40 0 '59.

(MIRA 13:1)

1. Zamestitel' nauchal'nika planovo-ekonomicheskogo otdela oblastnogo upravleniya torgovli, Moltava.

(Wholesale trade)



KLOVATSKIY, Y.

Let's simplify the method of planning. Sov.torg. 33 no.6:55 Je  
'60. (MIRA 13:7)

1. Zamestitel' nachal'nika Planovo-ekonomicheskogo otdela  
Oblastnogo upravleniya trgovli, g.Poltava.  
(Retail trade)

KLOVATSKIY, V.

Labor productivity: rise up to 67%. Obshchestv. pit. no. 5:40 My '61.  
(MIRA 14:5)

1. Nachal'nik planovo-ekonomicheskogo otдела Upravleniya torgovli  
oblistpolkoma.

(Restaurants, lunchrooms, etc.—Labor productivity)

KLOVATSKIY, V.

The province trade administration should have more rights. Sov.torg  
34 no.3:42 Mr '61. (MIRA 14:2)

1. Nachal'nik planovo-ekonomicheskogo otdela Upravleniya torgovli  
oblastskoma, Poltava.  
(Ukraine--Retail trade)

ZAYEZDNIY, A.M. Prinimali uchastiye; RAKHOVICH, L.M.; KLOVSKIY, D.D.;  
PAK, I.N.;

[Tables and formulas of sums of series of the type  $\sum_{n=1}^{\infty} \frac{e^{-rn^2} \cos nx}{\sin nx}$   
and  $\sum_{n=1}^{\infty} \frac{e^{-rn^2} \cos nx}{\sin nx}$  ] Tablitsy i formuly sumy riadov vidov

$\sum_{n=1}^{\infty} \frac{e^{-rn^2} \cos nx}{\sin nx}$  i  $\sum_{n=1}^{\infty} \frac{e^{-rn^2} \cos nx}{\sin nx}$ . Pod red. A.M. Zaednogo.

Leningrad, 1958. 73 p.

(MIRA 15:12)

(Series) (Mathematics—Tables, etc.)

USSR/Physics - Frequency characteristics

FD-3049

Card 1/2            Pub. 153 - 18/23

Author            : Klovskiy, D. D.

Title            : Approximate graphical analytical method for the construction of the frequency characteristics of a linear system according to transient characteristics

Periodical       : Zhur. tekhn. fiz., 25, February 1955, 333-338

Abstract        : Recently considerable attention has been given to the calculation of transient characteristics from given frequencies (V. V. Solodovnikov, "Use of trapezoidal frequency characteristics in analysis of properties of automatic regulation systems," Avtom. i telem., 10, No 5, 1949; A. A. Voronov, "Approximate construction of curves of transient process from real frequency characteristics," ibid., 13, No 6, 1952); however, the impulse methods and correspondingly the transient characteristics are so prevalent that great interest is in the reverse transition, namely from transient characteristics to frequency. In the present work the authors expound a practical

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FD-3049

Abstract : applied method of just such a conversion, which method is based on the notion of the approximation of a given curve by a sum of triangles as proposed by A. A. Voronov (op. cit.) in connection with the familiar relation between the frequency characteristic  $K(j\omega)$  and transient characteristic  $h(t)$  determined by the expression:  $K(j\omega) = j\omega \int_0^\infty h(t) \cdot \exp(-j\omega t) dt$  ( $t=0$  to  $\infty$ ).

Institution : -

Submitted : October 8, 1954



9(3)

SOV/142-2-1-9/22

AUTHOR: Klovskiy, D.D.

TITLE: The Solution of the Differential Equation of a Superregenerator (O reshenii differentsial'nogo uravneniya avkhreregneratora)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - radiotekhnika, 1959, Vol 2, Nr 1, pp 71-79 (USSR)

ABSTRACT: The author used the BWK method for the approximated solution of the differential equation of a superregenerator. The BWK method was developed by Brillouin, Wentzel and Kramers in 1926 for the approximated solution of wave mechanics. Using this method, Brillouin developed the approximated solution of the Hill equation. The author states that it is possible to convert the differential equation of a superregenerator, working in linear operation, to a Hill equation. Figure 1 shows the principal circuit arrangement of such a superregenerator. Its differential equation may be written in the following form:

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SOV/142-2-1-9/22

The Solution of the Differential Equation of a Superregenerator

$$\frac{d^2 u}{dt^2} + 2(t_1 - t_2) \frac{du}{dt} + \omega_0^2 u = \omega_0^2.$$

and after performing the necessary transformations, it will correspond to a Hill equation:

$$\frac{d^2 y}{dt^2} + \omega_0^2 \left( 1 + \frac{d^2 \epsilon}{dt^2} \cdot \frac{1}{\omega_0^2} - \frac{f_1^2}{\omega_0^2} + \frac{f_2^2}{\omega_0^2} - \frac{f_1^2}{\omega_0^2} \right) y = 0,$$

Then the author obtains the following form for the general solution of the differential equation of the superregenerator:

$$u = A \cos \left( \omega_0 t - \frac{f_1 t}{\omega_0} + \frac{f_2 t}{\omega_0} \right) + B \sin \left( \omega_0 t - \frac{f_1 t}{\omega_0} + \frac{f_2 t}{\omega_0} \right) + \frac{f_1^2}{\omega_0^2} \cos^2 \left( \omega_0 t - \frac{f_1 t}{\omega_0} + \frac{f_2 t}{\omega_0} \right) + \frac{f_2^2}{\omega_0^2} \sin^2 \left( \omega_0 t - \frac{f_1 t}{\omega_0} + \frac{f_2 t}{\omega_0} \right).$$

Card 2/3

AUTHOR: Klovskiy, D.

SOV/106-59-4-10/13

TITLE: Letter to the Editor (Pis'mo v redaktsiyu)

PERIODICAL: Elektrosvyaz', 1959, Nr 4, p 75 (USSR)

ABSTRACT: In the article "Build-up of Noise and Fading in Trunk Radio-relay Lines" (Elektrosvyaz', 1956, Nr 5), V.I. Soforov obtained expressions for the signal-to-noise ratio at the output of a trunk radio-relay line (Formulae (36) and 37)) with a  $\gamma$ -distribution of the signal power at the input to each station:

$$\gamma(P) = \frac{K^{K+1}}{\Gamma(K+1)} P^K e^{-KP} \quad (1)$$

with  $K$  as the parameter.

In the article, it was asserted that the relationships obtained were true for  $K \geq 2$  but additional investigation was necessary to show that they also apply for  $1 < K < 2$ . To demonstrate this, it is sufficient to show that the expressions obtained by Soforov for the mean value

Card1/2  $M\xi$  and the mean square value  $M\xi^2$  of the random value  $\xi$

Letter to the Editor

SOV/106-59-4-10/13

(the inverse of the power  $P$ ) are true, not only when  $K > 2$  but also when  $K > 1$ .

This the author demonstrates by proving that:

$$M\xi - 1, K > 0 \quad (7)$$

$$M\xi^2 = \frac{K}{K-1}, K > 1 \quad (8)$$

which agree with the theory previously obtained for  $K > 2$  and thus prove that Eqs (36) and (37) are also applicable when  $K > 1$ .

There are 2 Soviet references.

Card 2/2

KLOVSKIY, D. D., Cand Tech Sci -- (diss) "Static-resistance of procedures of discrete information in channels with variable parameters. (Comparison between various communications systems and the possibility of utilization in electronic computing machines)." Leningrad, 1960. 19 pp; (Ministry of Communications USSR, Leningrad Electrical Engineering Inst of Communications in Prof M. A. Bonch-Bruyevich); 240 copies; price not given; (KL, 21-50, 124)

KLOVSKIY, D. D.,

"Interference Immunity of the Reception of Discrete Information in Channels with Variable Parameters." Dissertation for the Degree of Candidate of Sciences, Leningrad Electrotechnic Inst. of Communication im. M. A. Bonch-Bruyevich. Defense held on 13 May 1960

An analysis is made of the potential capabilities of different communication systems, under the influence of fluctuation noise and fading. The optimal criteria for coherent and incoherent reception of discrete information and evaluated for a broad class of channels. Receiver circuits are constructed on modulating and on digital basis, acting in accordance with these criteria. The interference immunity is calculated for a broad class of communication circuits and channels with variable parameters and for many practical circuits.

Izv Vysshikh ucheb. zaved. MV1880 SSSR po razdelu Radiotekhnika, vol. 6, No. 1, 1963 p. 98-102 (original checked--Cand. of Sciences as in original.)

KLOVSKII, D. D.

Potential interference rejection in shortwave radiotelegraphy.  
Elektrosviaz' 14 no.9:3-11 S '60. (MIRA 13:9)  
(Radiotelegraph)

KLOVSKIY, D.D.

Potential interference rejection with fading of the signal.  
Radiotekhnika 15 no. 5:17-25 My '60. (MIRA 14:4)

1. Deystvitel'nyy chlen Nauchno-tehnicheskogo obshchestva  
radiotekhniki i elektrosvyazi.  
(Radio--Interference)

S/044/61/000/001/013/013  
0111/C222

6.4400

AUTHOR: Klovskiy, D.D.

TITLE: On potential noise proof feature under consideration of the  
dying away and the noise in the communication channel

PERIODICAL: Referativnyy zhurnal, Matematika, no.1, 1961, 32,  
abstract IV 201. ("Tr.Nauchno-Tekhn.konferentsii Leningr.  
elektrotekhn. in-ta svyazi" Vyp.3, L., 1959, 11-22)

TEXT: The methods of the statistical solutions are applied for  
the separation of the periodic random signal out of its mixture with  
noise.

[Abstracter's note: Complete translation.]

JB

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20071

9.1000(also 3402, 1127, 1103)

S/108/61/016/003/003/006  
B116/B205

AUTHOR: Klovnskiy, D. D., Member of the Scientific and Technical  
Society for Radio Engineering and Electrocommunication

TITLE: Potential noise-proof feature in the reception of discrete  
information with spaced antennas

PERIODICAL: Radiotekhnika, v. 16, no. 3, 1961, 22-30

TEXT: On similar conditions and with the aid of the same mathematical data which the author used in an earlier paper (Ref. 1: "Radiotekhnika", v. 15, no. 5, 1960) the author solves problems of the reception by means of spaced antennas. There are four kinds of reception of this type: time, frequency, space, and polarization reception. The last two are termed diversity antenna reception. In the first chapter the author gives criteria for the optimum spaced coherence and incoherence reception in the case of fluctuation disturbance. The amplitudes of the signals received in the individual spaced branches are distributed according to the generalized Rayleigh law without being correlated. In the second chapter the author determines the potential noise-proof feature for a

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3/108/61/016/003/003/006  
B116/B205

Potential noise-proof feature ...

wide class of systems of communications with active break. The relations obtained here hold for all mentioned types of reception. It is assumed that during the period  $T$  (duration of the signal pulse) the transmitter is capable of transmitting one of the  $m$  possible positions of the signal  $X_1(t)$  ( $1 = 1, 2, 3, \dots, m$ ) with the same probability. Furthermore, it is assumed that in each spaced branch these positions - if expanded into Fourier series - have series coefficients which are not equal to zero in the case of one frequency only. The signals show selective fading; no correlation of the signals exists in the individual antennas. The oscillations (signal plus interference) during the time  $T$  (in the individual branches) are designated with  $X'_1(t), X'_2(t), \dots, X'_B(t)$ ...  
....  $X'_B(t)$  ( $B$  is the number of the spaced branches). The criterion for an ideal reception and the realization are essentially simplified if the energies of all signal positions to be expected in the individual spaced branches are equal. Such systems are termed systems with active break. They have the reception criterion

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Potential noise-proof feature ...

$$\sum_{r=1}^m Z_{i,r}^* + Z_{i,r} + Z_{i,r} a_r(0) + Z_{i,r} b_r(0) > \sum_{r=1}^m Z_{i,r}^* + Z_{i,r} + Z_{i,r} a_r(0) + Z_{i,r} b_r(0), \quad (10)$$

$j = 1, 2, 3, \dots, m (j \neq i)$

where

rac

$$a_r(0) = \frac{\gamma_r \cos \psi_r(0)}{\sigma^2}, \quad b_r(0) = \frac{\gamma_r \sin \psi_r(0)}{\sigma^2}. \quad (11)$$

$Z_{i,r} = \int_0^T X_r^*(t) X_{i,r}(t) dt$  (5),  $X_{i,r}(t)$  is the  $i$ -th signal position in the  $r$ -th spacing branch.  $Z_{i,r}^*$  is conjugate to  $Z_{i,r}$  according to Hilbert,  $\sigma^2$  is the specific output of the additive fluctuation noise in the channel.  $\psi_r(0)$  is the phase shift in the channel of the stabilized component reaching the  $r$ -th spaced branch.  $\gamma(0) = \gamma_r(0)$  is the transfer ratio of

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Potential noise-proof feature ...

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B116/B205

the channel for the stabilized component. In analogy, the optimum criterion for the incoherence reception with systems with active phase is obtained:

$$\sum_{r=1}^B V_{l,r} + \frac{\sigma^2}{2\sigma_0^2} \left( \frac{1 + \sigma^2 + \bar{h}^2}{1 + \sigma^2} \right) \ln I_0 \left( \frac{2\gamma(\gamma) V_{l,r} (1 + \sigma^2)}{\sigma^2 (1 + \sigma^2 + \bar{h}^2)} \right) > \\ > \sum_{r=1}^B V_{l,r} + \frac{\sigma^2}{2\sigma_0^2} \left( \frac{1 + \sigma^2 + \bar{h}^2}{1 + \sigma^2} \right) \ln I_0 \left( \frac{2\gamma(\gamma) V_{l,r} (1 + \sigma^2)}{\sigma^2 (1 + \sigma^2 + \bar{h}^2)} \right). \quad (16)$$

$l = 1, 2, 3, \dots, m (l \neq 0).$

where  $V_{l,r} = \sqrt{z_{1,r}^2 + z_{1,r}^{*2}}$  (15);  $\bar{h}^2$  is the statistical mean value of the ratio between signal position energy and specific noise energy. When determining the potential noise-proof feature in several spaced channels only systems with active break are studied and formula

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5/108/61/016/003/003/006  
3116/3203

Potential noise-proof feature ...

$$p = 1 - p_{\text{error}} = 1 - \frac{\exp \left[ -\frac{Ba^2}{\lambda^2} (m + ma^2 + \bar{\lambda}^2) \right]}{\frac{m}{2^2} (B+1) \left[ \frac{Ba^2(1+a^2)}{\lambda^2} \right]^{B-1} \frac{m}{2} \left( \frac{1+a^2+\bar{\lambda}^2}{1+a^2} \right)^{\frac{B-1}{2}}} \times$$

$$\times \int_0^{\infty} x^{\frac{B-1}{2}} \exp \left( -\frac{x}{2} \right) I_{B-1} \left( \sqrt{\frac{2Ba^2(1+a^2+\bar{\lambda}^2)x}{\lambda^2}} \right) \times$$

$$\times \left[ \int_0^{\frac{1+a^2+\bar{\lambda}^2}{1+a^2}} y^{\frac{B-1}{2}} \exp \left( -\frac{y}{2} \right) I_{B-1} \left( \sqrt{\frac{2Ba^2(1+a^2)y}{\lambda^2}} \right) dy \right]^{-1} dx. \quad (23)$$

is derived for the coherence reception for the probability of an incorrect reception of the signal element. Formula

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3/109/61/016/003/003/006  
3116/3205

Potential noise-proof feature ...

$$p = 1 - p_{\text{pas}} = 1 - \frac{\exp\left[-\frac{Ba^2h^2}{1+a^2+h^2}\right]}{2^{\frac{B-1}{2}} \left(\frac{Ba^2h^2}{1+a^2+h^2}\right)^{\frac{B-1}{2}}} \int_0^{\frac{B-1}{2}} x^{\frac{B-1}{2}} \exp\left(-\frac{x}{2}\right) I_{B-1} \times$$

$$\times \left(\sqrt{\frac{2Ba^2h^2x}{1+a^2+h^2}}\right) \left(1 - \exp\left[-\frac{x(1+a^2+h^2)}{2(1+a^2)}\right] \sum_{r=0}^{B-1} \left[\frac{x(1+a^2+h^2)}{2(1+a^2)}\right]^r \frac{1}{r!}\right)^{B-1} dx. \quad (26)$$

is derived for the incoherence reception.  $I_{B-1}(x)$  is the modified Bessel function of  $(B-1)$ -th order.  $p_{\text{pas}}$  is the probability of a correct reception of the signal element. It can be seen from these formulas that with the same number  $B$  of spaced branches and with the same values of  $a^2$  and  $h^2$  the error probability (in systems with active break) differ only slightly in the coherence and incoherence reception. Hence,

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Potential noise-proof feature ...

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coherence reception in such systems is inexpedient for such systems. Finally, the author compares the noise-proof feature of the various spaced types of reception with the single reception with the same rate of information transfer and with the same mean output of the transmitter. The result is shown in Fig. 1. L. M. Fink is mentioned. There are 1 figure and 2 Soviet-bloc references.

SUBMITTED: July 5, 1960

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KLOVSKIY, D.D.

Interference rejecting feature of diversity reception in discontinuous communication systems. Izv. vys. ucheb. zav.; radiotekh. 5 no.2:250-256 Apr '62. (MIRA 15:7)

1. Rekomendovana kafedroy teoreticheskoy radiotekhniki Kuybyshevskogo elektrotekhnicheskogo instituta svyazi.  
(Radio--Receivers and reception) (Information theory)



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AUTHOR: Klovskiy, D.D.

TITLE: Noise-immunity of the diversity reception in intermittent receiving systems

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 5, no. 2, 1962. 250 - 256

TEXT: An intermittent communication system of the type described by G.F. Montgomery (PIRE, 1957, 45, no. 12) is considered. The information appearing at the individual diversity branches is received simultaneously under suitable conditions and each diversity branch is provided with one transmitter and a reverse control channel. The information is stored in individual diversity channels and is then subjected to suitable synchronous processing. The intermittent communication systems can be based either on frequency or angular diversity (A.S. Nemirovskiy - Elektrosvyaz', 1960, no. 8). During a signal element of duration  $T$  the transmitter can transmit any of the signal positions  $X_i(t)$  where  $i = 1, 2$  with equal probability. In the case of frequency diversity the signals over the interval  $T$  can be

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Noise-immunity of ....

represented by the Fourier series and have  $B$  frequency components where  $B$  is the number of the diversity branches; only one component is different from zero in angular diversity systems. The transfer functions  $\gamma_r$  of the individual diversity branches vary independently of each other but they are identical for both positions of the signal in any given channel. For each individual  $r$ -th diversity branch a signal is received when the ratio of the signal-element energy to the power density of the fluctuation noise  $\sigma^2$  is greater than a certain threshold value  $R$ , i.e. if the following inequality is met:

$$\frac{\gamma_r^2 E}{\sigma^2} > R \quad (1) .$$

First, the criterion of ideal reception is introduced (the author - Radiotekhnika, 1961, 16, no. 3) and a general formula for the mean probability of error during coherent reception and slow fading is introduced. By assuming that  
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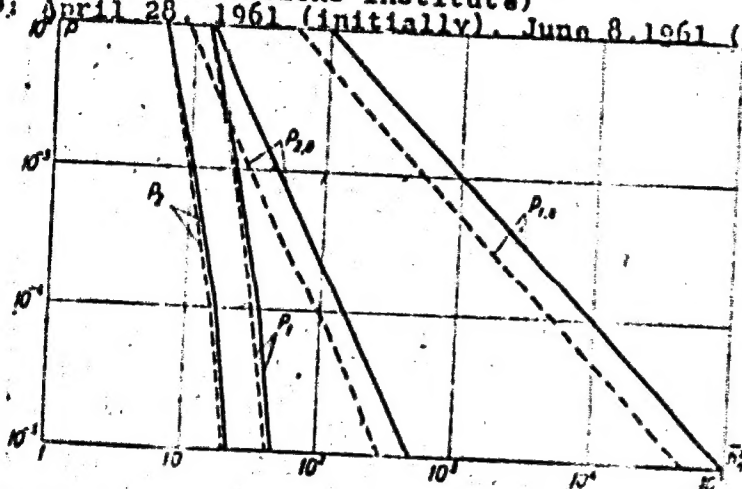
Noise-immunity of ....

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ASSOCIATION: Kafedra teoreticheskoy radiotekhniki  
Kuybyshevskogo elektrotekhnicheskogo instituta  
svyazi (Department of Theoretical Radio-  
engineering of Kuybyshev Electrotechnical  
Communications Institute)

SUBMITTED: April 28, 1961 (initially). June 8, 1961 (after revision)

Fig. 1:



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 ACCESSION NR: AP3000336  
 AUTHOR: Klovskiy, D. D.  
 TITLE: Noise immunity through diversity reception in intermittent communications systems  
 SOURCE: Izv. VUZ: Radiotekhnika, v. 6, no. 2, 1963, 195-197  
 TOPIC TAGS: diversity reception, intermittent communication system, signal element, fluctuating interference, threshold level, average error probability, reception interference  
 ABSTRACT: The possibility of the use of diversity reception (diversity in terms of frequency and arrival angle of the beam) as a means of increasing the noise immunity of an intermittent communications system is analyzed. The system assumes a common transmitter and a feedback control channel. The average error probability in the system was determined analytically and a comparison was made between single and paired noncoherent reception at an identical average speed of transmission. Under these conditions, paired reception by means of diversity antennas provided some energy gain as compared to single reception. Thus, at

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